

## CLAIMS

What is claimed is:

1. A method for evaluating a forward-buy opportunity relating to a product set, comprising:

initializing a user defined incremental forward buy quantity for each product in the product set;

inputting a financial parameter relating to at least one of an inventory carrying cost or a discount rate;

inputting a product parameter relating to at least one of a product demand, a product quantity, or a product price;

calculating a return on investment for each product in the product set in response to the financial and product parameters;

determining whether the calculated return on investment is equal to or greater than a defined value;

in response to the calculated return on investment being equal to or greater than a defined value, identifying the product having the highest return on investment and recording a recommended buy quantity relating to that product; and

incrementing the recommended buy quantity of the identified product and recalculating the return on investment for each product in the product set until each return on investment calculation is no longer equal to or greater than the defined value.

2. The method of Claim 1, wherein calculating a return on investment for each product in the product set further comprises:

calculating a net present value without a forward buy for each product in the product set, thereby defining a first value;

calculating a net present value with a forward buy of an additional unit for each product in the product set, thereby defining a second value;

calculating an investment cost of buying an additional unit for each product in the product set, thereby defining a third value; and

calculating a return on investment as a function of the first, second and third values.

3. The method of Claim 2, wherein the function of the first, second and third values comprises:

subtracting the first value from the second value, and dividing the difference by the third value.

4. The method of Claim 2, further comprising:

calculating a probability of demand materialization in response to the purchase of an additional unit of each product within a defined time period;

calculating a probability of no demand materialization in response to the purchase of an additional unit of each product within the defined time period; and

wherein the net present value with a forward buy takes into consideration the probability of demand materialization.

5. The method of Claim 4, wherein the defined time period comprises:

a first future time period, a second future time period, and a third future time period;

wherein the first, second and third future time periods are consecutive and equal in duration.

6. The method of Claim 1, wherein the product parameter includes a product availability limit, and further comprising:

determining whether the return on investment calculation for the product exceeds an acceptable threshold value;

determining whether the recommended buy quantity for the product exceeds the product availability limit for that product; and

in response to the return on investment calculation exceeding an acceptable threshold value for the product and the recommended buy quantity having not exceeded the product availability limit, identifying the product having the highest return on investment and recording the recommended buy quantity relating to that product.

7. The method of Claim 1, further comprising:

inputting a financial parameter relating to a purchasing budget;

determining whether a cost relating to the recommended buy quantity exceeds the purchasing budget; and

in response to the cost exceeding the purchasing budget, concluding the forward-buy opportunity evaluation.

8. The method of Claim 1, wherein

the inventory carrying cost includes at least one of a capital cost, an inventory service cost, a storage cost, or an obsolescence risk cost; and

the product parameter includes a statistical distribution of product demand.

9. The method of Claim 1, further comprising:

inputting a product parameter relating to a product trend; and

filtering out from the product set those products having a product trend indicative of a declining demand, an unpredictable demand, or a demand below a defined threshold.

10. An iterative method for comparing forward-buy purchasing opportunities across multiple products in a product set, comprising:

initializing for each product a user defined incremental forward buy quantity;

inputting financial and product information relating to each product of the product set, the product information including a statistical distribution of product demand, a current on hand balance, and a parameter relating to product trend;

filtering out from the product set those products having an undesirable product trend;

calculating for each product a probability of demand materialization in response to the statistical distribution of product demand, the current on hand balance, and a purchase of an additional unit of that product to increase the current on hand quantity;

calculating a return on investment for each product in the product set, the calculation factoring in a cost relating to the probability of demand materialization;

determining whether the return on investment is acceptable;

in response to the return on investment being acceptable, identifying the product having the highest return on investment and recording the recommended buy quantity relating to that product; and

incrementing the recommended buy quantity of the identified product and recalculating the return on investment for each product in the product set until each return on investment calculation is no longer acceptable.

11. The method of Claim 10, wherein the financial information includes a purchasing budget and further comprising:

determining whether a cost relating to the recommended buy quantity exceeds the purchasing budget; and

in response to the cost exceeding the purchasing budget, concluding the iterative method.

12. The method of Claim 10, wherein the product information includes a product availability limit, and further comprising:

determining whether the highest return on investment for the product set is above a minimum threshold value;

determining whether the recommended buy quantity for each product exceeds the product availability limit for that product; and

in response to the return on investment calculation being above a minimum threshold value and the recommended buy quantity having not exceeded the product availability limit; identifying the product having the highest return on investment and recording the recommended buy quantity relating to that product.